Tissue Classification of Cardiac Tissue using Optical Imaging for Monitoring and Guidance of Cardiac Ablation Therapy

Published date: July 23, 2009

Technology description

Cardiac arryhthmias are abnormalities of the electrical conduction of the heart and occur in patients of all ages with and without heart disease, compromising heart function. Radiofrequency ablation is a clinical procedure used to destroy tissue that triggers abnormal electrical signals or to block abnormal electrical pathways and treat cardiac arrhythmias. Currently, RF procedures are guided by low resolution fluoroscopy (low-energy x-rays) and monitored by functional measurements of electrical signals. However, to date there exists no direct method to monitor lesion formation in real-time. To address this need, researchers at Case Western Reserve University have developed an optical coherence tomography catheter and image analysis software that enables real-time, high resolution ablation lesion formation in vivo. This technology was developed in part by funding from the Coulter-Case Translational Research Partnership.

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